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PROGRESS REPORTS JUL 56 - MAR 57

PROGRESS REPORT FOR MARCH 1957

CONTAINERS, 1210-C-20

Once the mold design was accepted, the important problem remaining was the proper method of pouring the vest material so as to arrive at the correct foam consistency in the molded shape. Prior to this, the vest materials were mixed and poured without any real emphasis being placed on the correct mixing times or the correct method of pouring and securing the mold halves. Tests were conducted utilizing various mixing times and various foam material and catalyst proportions. Studies were also made of different ways of pouring into the molds and the various elapsed times from the point the foam materials were taken from the electric mixer to the time when the molds were clamped. These studies resulted in a large number of foams with varying cell sizes, resiliencies, and surface appearances. The foam sample that best answered the vest requirements was duplicated exactly with regard to mixing and pouring in the vest form with good results.

Future Work

A simple method will be designed for strapping the vest to the carrier's body which allows for wearing comfort and a quick easy disposal method.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for March, 1957	2,008.13
Total Obligations to March 24, 1957	8,644.61
Balance of Contract	\$1,264.39

Expiration Date - May 22, 1957

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PROGRESS REPORT

FOR

JANUARY 1957

ON

CONTAINERS

1210-C-20

February 28, 1957

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Following the fabrication of the first mold and the pouring of three (3) foam prototypes from the mold, the prototype vests were studied and found to be too bulky around the chest. Despite this, the vests were comfortable to wear over long periods of time and difficult to recognize when worn under normal clothing.

New molds were made from the mannequin form of an "average American male" in the same manner as the original molds. These molds were laminated from Miller's Plastic (M244) (Catalyst MEK) and alternate layers of Fiberglas cloth for the bottom mold, and Epon Resin (828) (Catalyst Diethylenetriamine) and alternate layers of Fiberglas cloth for the top mold.

In the new molds the larger containers were taken away from the chest portion of the mold and placed on the sides of the model near the lower set of ribs to eliminate the chest bulge which occurred in the first prototype.

Study of the foam vests to be made from the new molds will determine which container locations will provide the best concealment.

Future Work

New vests will be fabricated from the latest molds, and the relative merits of the two container arrangements will be studied.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for January, 1957	1,786.83
Total Obligations to 27 January 1957	4,677.73
Balance of Contract	\$5,231.27
Expiration Date - May 22, 1957	/hs

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PROGRESS REPORT

FOR

DECEMBER 1956

ON

CONTAINERS

1210-C-20

January 23, 1957

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The task to develop an undergarment vest with concealment containers attached has progressed to the selection of an elastomeric foam and form-fitting vest. A set of polyester molding forms is being fabricated in preparation to foam in place a form of the vest, and, to determine mold dimensions, two impressions were made of the chest section of the sculptured male figure that was purchased for this project.

The first impression duplicated the existing contours without the containers in place. This will form the surface that will be in contact with the courier's body. A second impression was made of a sculptured form with the containers in place on the chest and upper abdominal region. This will become the new body contour of the garment (vest). With the concealment compartments contained between the inner and outer surfaces, preliminary tests on this approach revealed only slight, if any, change in outward appearance.

Future Work

Continue to fabricate molds and make foam prototypes of vest.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for December, 1956	352.59
Total Obligations to December 23, 1956	3,170.60
Balance of Contract	\$6,738.40

Expiration Date - May 22, 1957

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PROGRESS REPORT

FOR

NOVEMBER 1956

ON

CONTAINERS

1210-C-20

December 21, 1956

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The task to develop an undergarment gear with concealment containers attached has progressed from a design study phase to a design and fabricating stage. Various approaches were explored during the design study and two were selected for fabrication. The design offering most promise was a flexible foam plastic that could be foamed in place. By evaluation of a number of elastomeric foams, a polyurethane resin was found to be most feasible for this application because of the room temperature catalyst system and the wide range of densities that could be obtained by varying the formulation of the resin prior to catalyzation. The advantages of this type of resin will permit us to use a closed plaster or plastic mold and foam the plastic into the form of a body aid, and the person wearing the gear would appear to have only a slight change in muscular build as opposed to the present potbelly and flat chested appearance.

Preliminary tests used this approach show that this design would lend itself to a very rapid disposal. The second approach chosen for further investigation was to reduce the disposal time on the present gear by replacing the snaps with a lanyard and flaring in corners of the containers to eliminate their outward appearance.

Future Work

Necessary materials and equipment to produce prototypes will be prepared.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for November, 1956	116.90
Total Obligations to November 25, 1956	2,818.01
Balance of Contract	\$7,090.99

Expiration Date - May 22, 1957

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PROGRESS REPORT

FOR

OCTOBER 1956

ON

CONTAINERS

1210-C-20

November 28, 1956

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Progress on the task to develop an undergarment gear with concealment containers incorporated into the design without detection from outward appearances has been limited to procurement of materials to be used and their evaluation pending the receipt of actual items to be concealed in the container gear.

Future Work

Study means of rapid disposal of the undergarment gear containing items of concealment.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for October, 1956	1,051.06
Total Obligations to October 21, 1956	2,578.30
Balance of Contract	\$7,330.70

Expiration Date - November 23, 1956

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PROGRESS REPORT

FOR

SEPTEMBER 1956

ON

CONTAINERS

1210-C-20

November 2, 1956

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This project involves the design of a quick-disposal under-garment gear which presents two major tasks: first, to relocate containers to better assimilate contours of the body, the other to devise a system for removal without detection.

During the Project Officer's recent visit, two approaches were agreed upon as an initial attempt to modify the gear. One involves the relocation of containers in an arrangement so that all the units would be located on or close to the abdominal and chest regions. The alternate means consists in the possible use of the areas surrounding the cavity of a back, chest, pelvic area and legs.

Information pertaining to process of spray metallizing has been attained through local distributor. This equipment is most desirable in order to eliminate the existing molding problem. It is proposed to obtain containers, smooth and feather edge the containers with clay, and then make a full size chest mold by spraying a metal over the new contour. The result would yield a mold into which the containers and wires would be placed and then a synthetic foam rubber would be poured. The result would be a foam rubber vest which when placed on a person would enlarge his build.

Future Work

Obtain literature on synthetic vinyl foam plastisols, purchase clothing for item and mold containers into desired shape.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for September, 1956	558.69
Total Obligations to September 30, 1956	1,678.96
Balance of Contract	\$8,230.04

Expiration Date - November 23, 1956

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PROGRESS REPORT

FOR

AUGUST 1956

ON

CONTAINERS

1210-C-20

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September 28, 1956

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Progress this month involved the further design of an undergarment gear. Simplicity is necessary since removal of gear must be accomplished easily and swiftly. A vest has been made of cotton duck material consisting of a solid front with two elasticized straps fastened permanently at top of shoulders, then crossing in back and attached by means of two snap buttons onto both front sides. Relocation of containers is underway to conform to the contour of the body. It is felt that by relocation a more realistic outline will be obtained.

Since this alone would still be susceptible to detection, a foam rubber pillow was obtained, cut in half and holes dug out of rubber to dimensions of containers. The foam rubber on the exterior would appear as a normal outline. Eventually, it is felt that the rubber can be molded to specifications.

A shirt consisting of only the front and part of arms is then to be placed over the foam rubber. This shirt has no collar on it, so it is placed under the original shirt and held in place by the necktie worn.

When in operation and need for disposal arises, person releases two snap buttons of vest at sides, opens coat and pulls whole gear in one operation leaving original shirt and tie and no evidence of removal.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for August, 1956	843.96
Total Obligations to August 31, 1956	1,120.27
Balance of Contract	\$8,788.73

Expiration Date - November 23, 1956

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PROGRESS REPORT

FOR

JULY 1956

ON

CONTAINERS

1210-C-20

September 17, 1956

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To get this project underway, it became necessary to locate a source to sculpture a detailed life-size male figure and reproduce the model in a material capable of withstanding rough handling. A source has been located and delivery is expected during the next report period.

Since this project includes two related tasks, an inexpensive commercially available figure was purchased to aid in the design and development of undergarment gear having rapid disposal features.

Studies are also being made to relocate items attached to garment in an effort to improve their concealment without outward detection. Our first approach to improve the gear was to design a lanyard that would be accessible when the fly is unzipped and a pull on the lanyard would detach the gear from the body without the removal of any clothing.

Future Work

Study the feasibility of producing body contour containers and a means of attachment and disposal.

Financial Statement

Total Amount of Contract	\$9,909.00
Obligations for July, 1956	128.17
Total Obligations to July 31, 1956	276.31
Balance of Contract	\$9,632.69

Expiration Date - November 23, 1956

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